REMARKS

The non-final Office Action was issued on pending claims 1-22, 38-45 and 65-68. Claims 1-22, 38-45 and 65-68 stand rejected. In this Response, claims 1, 10, 11 and 15-19 have been amended, and no claims have been cancelled or added. Thus, claims 1-22, 38-45 and 65-68 are pending in the application.

Applicant invites the Examiner to call Applicant's Representative to discuss any issues with this application.

The Office Action in paragraph 1 acknowledges that all previous rejections have been withdrawn. Applicant thanks the Examiner for that notice.

Claim Rejections – 35 USC § 102

In Office Action paragraph 3, claims 1-22, 38-45 and 65-68 were rejected under 35 U.S.C. § 102(e) as being anticipated by Andersen et al. (US 6,180,037). Applicant respectfully disagrees.

Andersen et al. Does Not Have a High Loading of Microspheres

The Office Action asserts that the Andersen et al. composition has "a plurality of microsphere particles ... ranging from 69% to about 85% by volume of the composite material" and refers to column 7, lines 9-13 of Andersen et al. Applicant respectfully submits that Andersen et al. does not describe its composition as having such a high volume of microspheres.

The Andersen et al. composition is a highly inorganically filled organic polymer matrix. Andersen et al. is mainly concerned with making products such as printed sheets, containers and other packaging materials. Such sheets are less expensive and are more environmentally friendly than sheets made from conventional materials (such as paper, plastic, or metal) and are especially useful in the manufacture of disposable food and beverage containers used by the fast food industry. See Andersen et al. at column 1, lines 35-39. The Andersen et al. material is purportedly a replacement for packaging, including paper packaging. Applicant submits there is no motivation to provide Applicant's high microsphere loading volume for the Andersen et al. packaging material, such as paper packaging material. Applicant's microsphere-laden material

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provides a very different product having remarkable strength compared to the Andersen et al. paper packaging material.

Sheets of the Andersen et al. material "contain from as low as about 40% to as high as about 98% inorganics (by volume of the total solids content) dispersed within an organic polymer binder matrix, thereby forming a highly inorganically filled/organic polymer matrix." See column 7, lines 9-18. Apparently, the Office Action asserts that the Andersen et al. inorganic materials can be microspheres at that high volume. However, Andersen et al. merely uses microspheres as an additive to the high volume inorganic material to lighten the weight of the composition. Andersen et al. does not describe the composition as having the entire or nearly entire amount of inorganic material being microspheres. After describing the inorganic aggregates as being ordinary sand, clay, and calcium carbonate (limestone), which are environmentally safe, inexpensive, and essentially inexhaustible, Andersen et al. at column 11, lines 34-39 states:

> In other cases, lightweight aggregates can be added to yield a lighter, and often more insulating, final product. Examples of lightweight aggregate are perlite, vermiculite, hollow glass spheres, aerogel, xerogel, fumed silica, and other lightweight, rock-like materials. These aggregates are likewise environmentally neutral and relatively inexpensive.

(emphasis supplied). Merely adding microspheres to the Andersen et al. inorganic aggregate to lighten the final product does not teach Applicant's invention of a high loading of microspheres.

Furthermore, Andersen et al. states clay and gypsum are particularly important inorganic aggregate materials for its composition. See column 26, line 63 - column 27, line 22. Even further, Andersen et al. touts an advantage of being able to include a large variety of inorganic aggregates in its material, for example at column 26, lines 22-25. Hydraulic cement, such as portland cement, can even be used as an inorganic filler in the Andersen et al. composition. See column 27, lines 23-37. Nowhere does Andersen et al. describe that microspheres be used as the only inorganic aggregate filler at a high volume. Rather, Andersen et al. merely describes microspheres as being an additive to other inorganic aggregates to lighten the composition.

Thus, Andersen et al. does not anticipate Applicant's claimed invention.

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Andersen et al. Does Not Have a Water Indispersible Polymeric Binder Material

Although Applicant believes the claims are allowable over Andersen et al. without amendment, independent claims 1, 15, 18 and 19 have been amended to clarify the matrix material to quickly move the application to allowance.

Claim 1 now recites "a polymeric material which is generally indispersible in water." Claim 19 also claims "a polymeric material ... which is generally indispersible in water." Claim 15 recites "a non-water-dispersible polymeric material." Claim 18 calls for "a water non-dispersible resin matrix binder material." Claim 10 has been amended to be consistent with claim 1. The amendments are supported by the application as originally filed. The original specification provides various examples of the "matrix material" which are polymeric materials that are generally water indispersible. See also, original claim 10. Thus, new matter has not been added. The dependent claims have been amended to be consistent with their respective independent claims.

Applicant respectfully submits that Andersen et al. does not describe or suggest a composite material having a polymeric material which is generally indispersible in water. The material in the Andersen et al. composition which corresponds to Applicant's water indispersible polymeric material is the Andersen et al. water-dispersible organic binder and water. See Andersen et al. at column 7, lines 55-61 which describes the major components as including water-dispersible organic polymer binder and water. Clearly, the Andersen et al. water-dispersible organic binder and water are not Applicant's claimed polymeric material which is water indispersible.

Andersen et al. describes the water-dispersible organic binder and water at columns 23-24, and nowhere does Andersen et al. describe binder and water as being water indispersible. Rather, Andersen et al. describes the water-dispersible organic binder at column 23, lines 37-45 as follows.

> The various water-dispersable organic binders contemplated by the present invention can be roughly organized into the following categories: (1) polysaccharides and derivatives thereof, (2) proteins and derivatives thereof, and (3) synthetic organic materials. Polysaccharide rheology-modifying agents can be further subdivided into (a) cellulose-based materials and

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> derivatives thereof, (b) starch-based materials and derivatives thereof, and (c) other polysaccharides.

Andersen et al. further describes suitable synthetic organic binders that are water dispersable including, for example, polyvinyl pyrrolidone, polyethylene glycol, polyvinyl alcohol, polyvinylmethyl ether, polyacrylic acids, polyacrylic acid salts, polyvinyl acrylic acids, polyvinyl acrylic acid salts, polyacrylimides, ethylene oxide polymers, polylactic acid, and latex (which is a broad category that includes a variety of polymerizable substances formed in a water emulsion; an example is styrene-butadiene copolymer). See column, 24, lines 5-13.

The Andersen et al. composition includes water as described at column 24, lines 21-36.

> As set forth above, water is added to the moldable mixture in order to solvate, or at least disperse, the water-dispersable organic binder within the mixture. In many cases, some of the water actually reacts with and becomes chemically bound within the organic binder. In other cases it may be more loosely bound to the organic binder, often by means of hydrogen bonding. Certain amounts of water may also react with other admixtures within the mixture, such as hydraulically settable binders or other materials which chemically react with water.
>
> The water also serves the function of creating a moldable mixture having the desired Theological properties, including viscosity and yield stress. These properties are general ways of approximating the "workability" or flow properties of the moldable mixture.

Again, Andersen et al. includes water and water dispersible organic binder and not Applicant's polymeric material which is water indispersible. Thus, Andersen et al. does not anticipate Applicant's claims.

Furthermore, there is no suggestion, motivation or incentive to modify Andersen et al. to substitute the water-dispersible organic binder and water with a water indispersible polymeric material. Indeed, Andersen et al. teaches away from a water indispersible binder material. An objective of Andersen et al. is to provide an environmentally friendly material which easily breaks down when discarded. See, for example, Andersen et al. at column 10, lines 19-32.

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Andersen et al. has a water dispersible binder material and water so that the composition can easily bear down when discarded. It would be contrary to Andersen et al. to modify the water dispersible organic binder and water to be a water indispersible polymeric material.

Even further, Andersen et al. repeatedly criticizes and distinguishes materials such as plastics and polystyrene from its water dispersible organic binder and water. See the "Background of the Invention" section of Andersen et al. at columns 1-6.

Thus, it would not be obvious to modify Andersen et al. or combine Andersen et al. with another reference to render Applicant's claims obvious.

Applicant submits the dependent claims are allowable at least for the same reasons that their respective independent claims are allowable, and also because of their further limitations.

Thus, Applicant submits that the §102 rejection should be withdrawn.

CONCLUSION

For the foregoing reasons, Applicant submits that the patent application is in condition for allowance and requests a Notice of Allowance be issued.

The Commissioner is authorized to charge and credit Deposit Account No. 50-3189 for any fees associated with the submission of this Response, including any time extension fees. Please reference docket number 112736-013.

Respectfully submitted,

EVEREST INTELLECTUAL
PROPERTY LAW GROUP

BY _____

Michael S. Leonard
Reg. No. 37,557
P.O. Box 708
Northbrook, IL 60065
Phone: (847) 790-7622

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